


CROSS REFERENCE TO RELATED APPLICATION

 [0001] This application is a continuation-in-part of U.S. application Serial No. 09/902,471 filed July 10, 2002.

FIELD OF THE INVENTION

[0002] The invention is directed to a medical device and method to apply repetitive compression forces to the front thorax of a person to aid blood circulation, loosening and elimination of mucus from the lungs of a person and relieve muscular and nerve tensions.

BACKGROUND OF THE INVENTION

[0003] Clearance of mucus from the respiratory tract in healthy individuals is accomplished primarily by the body's normal mucociliary action and cough. Under normal conditions these mechanisms are very efficient. Impairment of the normal mucociliary transport system or hypersecretion of respiratory mucus results in an accumulation of mucus and debris in the lungs and can cause severe medical complications such as hypoxemia, hypercapnia, chronic bronchitis and pneumonia. These complications can result in a diminished quality of life or even become a cause of death. Abnormal respiratory mucus clearance is a manifestation of many medical conditions such as pertussis, cystic fibrosis, atelectasis, bronchiectasis, cavitating lung disease, vitamin A deficiency, chronic obstructive pulmonary disease, asthma, and immotile cilia syndrome. Exposure to cigarette smoke, air pollutants and viral infections also adversely affect mucociliary function. Post surgical patients, paralyzed persons, and newborns with respiratory distress syndrome also exhibit reduced mucociliary transport.

[0004] Chest physiotherapy has had a long history of clinical efficacy and is typically a part of standard medical regimens to enhance respiratory mucus transport. Chest physiotherapy can include mechanical manipulation of the chest, postural drainage with vibration, directed cough,